

DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
YELLOWSTONE NATIONAL PARK  
YELLOWSTONE PARK, WYO.

ICE OF THE SUPERINTENDENT

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MONTHLY REPORT

for

N o v e m b e r

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MONTHLY REPORT

1920.

N o v e m b e r

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OFFICE OF THE SUPERINTENDENT

December 9, 1920.

Dear Sir:

The following is report on conditions in Yellowstone National Park, and on the operation of the Park, for the month of November, 1920.

GENERAL CONDITIONS:

The mean temperature at Mammoth Hot Springs for the month was 26.2 degrees, a departure from normal of -3.1. Lower monthly mean temperatures for November during the past twenty years have been recorded in 1911, 1916, and 1919. However, no extremely cold weather occurred during the month, the coldest being -8 on the 12th. The first two weeks were persistently colder than normal, but moderate temperatures prevailed during the remainder of the month.

The total precipitation during November was 1.13 inches; departure -0.31 inches. Although the precipitation was below normal, there were fifteen days with a measurable amount of snow or rain. With the exception of 1896, when an equal number of days with precipitation was recorded, November of this year stands as the greatest of record. Of the recorded precipitation, the greatest proportion was snow, of which a total of 10.4 inches fell at Mammoth. For the most part, this snow melted soon after falling, so the amount of accumulated snow on the ground at any time was light as compared with the average November, and at the end of the month there was but one inch of snow remaining on the ground. The ground was practically bare from the 18th to the 26th.

A snowstorm accompanied by several loud claps of thunder was the occasion of general remark on the evening of November 7th.

The wind movement was unusually light. The maximum velocity was 35 miles per hour, from the southwest, on the 3rd.



About the normal amount of sunshine occurred, the percentage of possible being 45.

The Monthly Meteorological Report furnished by the United States Weather Bureau is enclosed.

The weather conditions throughout the month were most favorable for the wild animals, which remained well up in the mountains and were not tempted to drift outside of the park for forage. The weather conditions were also favorable to building and other improvement work, which was continued throughout the month by some of the park companies. It also enabled us to send out a few belated winter supplies to distant ranger stations.

At the higher elevations throughout the upper part of the Park, several warm days about the middle of the month, followed by freezing weather, crusted the snow, but this condition did not prevail in the lower country where the wild animals range in winter, as there was not enough snow to crust. Many of the larger lakes are still open, and but few of the creeks have frozen over. The gauge at Lake Outlet indicated that the water in Yellowstone Lake was four inches lower at the end of November than at the end of October.

Motor vehicles could be used to take supplies from Mammoth to the West entrance, Upper Basin, and to the Cooke City or northeast corner, throughout the month. The last car to travel over the road between Canyon and Norris, which crosses quite a high divide, came in with the Superintendent of the Hotel Company and the General Manager of the Camps Company, on November 23rd, without much trouble. Since that date, a mile or two of the road near Obsidian Cliff between Mammoth and Norris has been a little difficult for cars to negotiate on account of deepening snow, consequently, has not been much in use, but is not yet entirely blocked.

The saddle and pack horses used by rangers for patrolling the Eastern and Southern Districts were brought in on November 12th, before the snow should become so deep in the passes that they could not get through. All patrols in these sections have since been by snowshoes, skis, or on foot.



Motor traffic from Gardiner via Mammoth, Tower Falls, Buffalo Farm, and Soda Butte to Cooke City, was possible throughout the month. The Cooke City-Gardiner mail carrier made the trip regularly. Our trucks had occasion to make two trips to the Buffalo Farm, and a few trips were made by trucks employed by Cooke City property owners, taking in winter supplies.

Daily train service was maintained to the northern entrance to the Park, at Gardiner, Montana, by the Northern Pacific Railroad Company, throughout the month.

#### Travel.

The enclosed travel report from the Chief Ranger shows a total of sixty-one persons entering during the month. A careful regulation of travel was necessary on account of the necessity for protection of game and fish, and to guard against vandalism, when no road patrols were being made, and those who desired to travel further than park headquarters were required to have special permits. Most of those who came in were local people on business, but one party of three was given a special permit to visit the Upper Basin.

#### Labor and Supply Market.

There was no demand for labor in this section during the month. On the contrary, those employing labor at the beginning of the month were gradually closing up the work for the long winter.

There was a noticeable downward trend in the prices of supplies of many kinds in the local markets.

## II. PERSONNEL.

### Employees.

On November 1st there were seventy-three employees on duty under this office, but by November 30th there were but sixty-seven so employed. (Review)  
68 ?  
65

The following list shows number of employees of various classes serving under appointment during the month, with general statement of the kind of work performed:

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
2 ✓	Asst. Engineer <sup>s</sup>	Making surveys and office engineering.
3 ✓	Clerks	1 disbursing agent and purchasing clerk; 1 stenographer-typist on orders, proposals, and vouchers; 1 stenographer-typist on files, stenographic work, cutting and pasting clippings.
2 ✓	Electricians	Read meters; did necessary line work, and operated power plant regular shifts, including Sundays.
1 ✓	Foreman	In charge of stables at headquarters.
1 ✓	Telegraph Operator	Sent and received all Government Western Union messages; operated one shift on telephone switchboard.
1 ✓	Telephone Switchboard Operator	Operated telephone switchboard, daily shifts, including Sundays.
1 ✓	Master Mechanic	In charge of shops, and of repairs to heavy road machinery.
1 ✓	Blacksmith	General blacksmith work, including shoeing horses in shop and in the field for crews; overhauling and repairing tools and equipment.
1 ✓	Steward and Master of Transportation	In charge of all transportation and of storehouses.
1 ✓	Painter	Renovated quarters at headquarters, also painted signs and equipment.
1 ✓	Lineman	In charge of telephone and telegraph system. Did emergency work and installed instruments.
1	Laborer <sup>s</sup>	Miscellaneous work at Headquarters. (Resigned effective Nov. 15, 1926).



<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
1 ✓	Handyman	Worked in storehouse issuing and receiving supplies.
1 ✓	Buffalo Keeper	In charge of tame buffalo herd.
1 ✓	Asst. Buffalo Keeper	Assisting buffalo keeper.
1 ✓	Park Naturalist	In charge of Information Office, and scientific research.
1 ✓	Plumber	In charge of general plumbing and repairs to same at headquarters.
1 ✓	Motorcycle Mechanic	Repairing motorcycles.
2 ✓	Automobile Mechanics	Repairing motor trucks and touring cars.
1 ✓	Watchman	Made hourly patrols during night at Headquarters; took care of office, and kept furnace going during the night.
1 ✓	Chief Ranger	In charge of Ranger force.
3 ✓	Asst. Chief Rangers	1 in charge of southern district; 1 in charge of western district; 1 on time keeping and cost accounting in office of Chief Clerk.
6 ✓	First-Class Park Rangers	In charge of ranger stations and making patrols.
16	Park Rangers	In charge of ranger stations; doing patrol work, etc. <i>V. J. J. Souther</i> <i>Just as Asst. Ch. S.</i>
4	Temporary Park Rangers	Doing regular patrol work and assisting in Chief Ranger's Office. (1 laid off effective Nov. 15, 1920).

In addition to the regular employees listed above service under appointment, the following were employed temporarily by the day:

	<u>On Nov. 1st</u>	<u>On Nov. 30th</u>
Mechanics	3	3
Teamsters	2	1
3 Laborers	5	2
/ Skilled Laborers	<u>6</u>	<u>3</u>
	16	9

#### Leaves of Absence.

During November annual leaves of absence were granted as follows:

Wash Madison,	Laborer,	8 days - Nov. 6-15
Thad C. Pound,	Park Ranger,	2 " - Nov.11-noon-Nov.13-noon.
P.E. Bredon,	Asst. Electrician	24 " - Nov. 1-29
Harry Trischman,	Asst.Chief Park Ranger,	8 " - Nov.11(neon)-Nov.20-noon
Geo. Dustman,	Asst.Chief Park Ranger,	$\frac{1}{2}$ " - Nov. 13(Neon)-Nov.13
Joseph Douglas,	Park Ranger,	2 " - Nov. 17(neon)-Nov.19-noon
A.W. Burney,	Asst.Engineer,	3 " - Nov.18-20
Helen E. McNutt,	Stenog-Typist,	$\frac{1}{2}$ " - Nov. 18(neon)-18
W. Wiggins,	Plumber,	5 " - Nov.22(neon)-30
Geo. T. Dustman,	Asst.Chief Park Ranger,	$\frac{1}{2}$ " - Nov.20(neon)-20
Chester A.Lindsley,	Acting Supt.,	2 " - Nov. 24-26
Lewis L. Hill,	Asst. Engineer,	4 " - Nov. 25-30
Lee Webb,	Carpenter,	2 " - Nov.22(neon)-24(neon)
A.C. Neumann,	Painter,	$1\frac{1}{2}$ " - Nov.29-30(neon)
Geo. T. Dustman,	Asst.Chief Park Ranger,	$\frac{1}{2}$ " - Nov.27(neon)-27
Harry Marshall,	Mechanic,	" - Nov.13(neon)-13
" "	"	" - Nov.20(neon)-20
" "	"	" - Nov.27(neon)-27
William Riley,	"	$1\frac{1}{2}$ " - Nov.13(neon)-15

#### Appointments.

Nov. 17: Lee Webb, Carpenter, \$110 per month. Temporary.

#### Separations.

Nov. 15: Oze Van Wyck, Jr., Park Ranger, \$80 per month. Temporary.

#### Promotions.

Lewis L. Hill, Asst. Engineer, \$2400 p.a., effective Nov.1, 1920.  
Joseph Douglas, Park Ranger, \$1520 p.a., effective Nov.1, 1920.



### III. WORK COMPLETED;

#### (a) Construction of Physical Improvements.

The only construction work in progress during the month was the work on the Buffalo Fork Bridge in the South Forest, which was done by contract with the Riverton Construction Company, of Riverton, Wyoming, under the supervision of the U.S. Bureau of Public Roads, Denver, Colorado. The time for completion of the construction of substructure and erection of superstructure for this bridge was extended for a period of fifteen working days by letter signed by Assistant Secretary Vogelsang, under date of November 24, 1920. Due to the distance from our headquarters, and the fact that we have had no representatives on the ground, it has been a difficult matter to keep in touch with this work, but a telegram from Mr. Petry, dated November 22, 1920, states that the bridge was completed.

#### (b) Maintenance and Repair of Physical Improvements.

Aside from the work accomplished by the permanent force at Headquarters, which is shown under another heading, there is nothing to report.

#### (c) Miscellaneous Improvement Work.

The two engineers finished the survey of the proposed Firehole Cut-off road, and the proposed new road through Lower Geyser Basin by way of Black Warrior and the Great Fountain Geyser, about the middle of November and came in to Headquarters to work up their notes on these surveys and prepare data for use with the annual estimates.

#### (d) Service to the Public.

As the Park was not open to tourist travel, there is nothing of any consequence to report under this head. The enclosed Chief Ranger's Reports for November, 1919, and November, 1920, show there were but few people visited the Park, and most of these were on business and made short trips from the northern and western entrances.

Information Service. The only information service maintained consisted of answering inquiries by mail.

### IV. WORK IN PROGRESS.

#### (a) Construction of Physical Improvements.

The only work in process of construction in the Park is that being done by the concessioners doing business



in the Park, and these are mentioned under another heading.

(b) Maintenance and Repair of Physical Improvements.

No working crews were maintained in the field during the month. The shop force was engaged in repairing tools and equipment, and generally overhauling and remodeling motor cars, trucks, motorcycles, gravel loaders, and other heavy road machinery. A heavy 700 gallon steel tank heretofore used for road oil was moved in from Norris, given a general overhauling, needed changes made, and mounted upon a two ton Ree truck for use next summer in hauling gasoline for use in the field. This work was not quite completed at the end of the month. The painter and assistant put in most of the time on renovating buildings at Headquarters. The plumber did the usual emergency repair work that is constantly coming up in connection with so large a water and sewer system, and installed new work in a set of quarters that are being fixed up for use of Park employees. The carpenter did necessary repair work to buildings, repaired storm windows, assisted in remodeling buildings into living quarters, and made necessary repairs to tools and equipment that were being overhauled in the shops. The linemen and electricians worked together, making necessary repairs to telephone lines, installed instruments and electric light fixtures where needed, read meters, and ran the hydro-electric power plant nineteen hours per day throughout the month. A total of 12310 kilowatt hours of current were generated, of which 1947 were consumed by park utilities, 1050 were used for street lighting, and the balance of 9313 kilowatt hours is accounted for by use for lighting government buildings, power for shops, and wastage on the power lines. The peak load for the month was 38 KW.

Improvements by Park Utilities.

The Hotel Company finished the work on the dormitory at Canyon and brought in the crew. The tank for the new gasfilling station at Whittaker's Canyon Store was hauled out during November, from Gardiner to the Canyon, but no further work was done there, and the installing of the tank and finishing of the station has been left for next spring.

The Yellowstone Park Transportation Company kept several mechanics at work overhauling automobiles during



November. The new central steam heating plant for the garage, shop mess house, and bunk house, was completed and tried out. The boilers are installed under a temporary shelter, which must be replaced by a permanent boiler house next spring.

The Yellowstone Park Camps Company continued work on the new laundry building at Mammoth Camp, and this building was about 95% completed at the end of November. Other work in connection with improvements at Mammoth Camp accomplished during November consisted of getting out logs for 30 new tent cottages which are to be erected next spring, and the excavation was begun for installing a new water system to connect with our mains for furnishing this camp and to take the place of an inadequate system which has been more or less temporary in character and flimsy in construction.

The crew working at Tower Falls for the Camps Company continued until about November 20th, when it was laid off. The work completed consisted of finishing the forms for the swimming pool so the concrete can be poured early in the spring. The foundation was also completed and the logs cut for a Council House for the proposed Boys' School at Camp Roosevelt. All work was discontinued at Camp Roosevelt about November 20th and the camp was left in charge of a winter keeper.

The crew at Canyon Camp working on the new dining room and kitchen was laid off on November 27th, leaving the job about 95% completed. The Company also had a survey made at Canyon Camp for a new water supply, which is badly needed there, which contemplates a pumping station on Yellowstone River; and also had a topographical survey made of one-half of the Canyon Camp, the other half to be done later.

#### VI. PLANS OR PROPOSED WORK.

The Yellowstone Park Camps Company proposes to send a crew of about three or four men to Camp Roosevelt during December to put up the log building for use as a Council House, for which logs have been cut and foundation laid. This should be done before the end of the month, and is practically all the work



this company contemplates during the winter except what can be done by a mechanic and one man, who will be left in charge at Mammoth Camp.

Our work for December contemplates the working up in the office, by the two engineers, of notes of surveys made in October and November, plans and estimates for further work, and routine work. By the office force, routine work, filing, posting up scrap books with clippings, and posting up the property return, which has fallen behind with the rush of summer work.

Remodeling, repairing, and usual work incident to upkeep of buildings at Headquarters, water and sewer system, by the carpenter, painters, and plumber. Usual and necessary operation and repairs by lineman, telephone operators, and electricians. Continuation of work of overhauling of motor vehicles, tools, and heavy road machinery by the shop force.

The work of harvesting ice for next season's use at Headquarters will be taken up as soon as the ice forms thick enough to harvest.

The year's supply of coal for fuel and shops at Headquarters must be trucked from Gardiner as fast as it comes in.

#### VII. POLICIES.

No new policies were adopted during November.

#### VIII. COST OF OPERATION.

Cost reports showing expenditures for November will be transmitted as soon as completed.

#### IX. OTHER MATTERS OF INTEREST.

##### Wild Animals.

The general conditions of weather, forage, etc., were ideal for the elk, deer, antelope, mountain sheep, and buffalo, throughout the month. This is most fortunate as the Montana State Game Laws still provide an open season for elk in Park County to December 25th, and if the weather becomes cold and stormy before its close, the slaughter of a year ago along the north line is apt to be repeated. As it has been thus far, there has been nothing to drive the elk outside, and



hunters have had such poor success that they have practically abandoned the hunting grounds for the present. Their possible presence, however, and the presence of a few trappers in several places not far from the park line, required the concentrated efforts of the most of the ranger force making constant patrols of the park lines where hunting was likely to occur.

Buffalo, tame herd: The tame buffalo also secured plenty of forage on the range and did not have to be fed, except the calf herd which was held in corrals during the process of vaccination. The 1920 crop of calves, 42 in number, were vaccinated for hemorrhagic septicemia on November 5th, and the second vaccination was given November 12th. This work was done by veterinarians sent to the Park for the purpose from the Helena office of the U.S. Bureau of Animal Industry. Six of the male calves were castrated at the time of the second vaccination, November 12th. By your authority, a fine three year old buffalo bull from the tame herd was shipped to the Director, Zoological Society, Toledo, Ohio, on November 8th. Advice from the Director states that this animal arrived in excellent condition. The total cost to the Society for having crate made, and hauling the bull from the farm 35 miles to the express office at Gardiner, and other small items of expense incidental to shipment was \$85.52, and the shipping weight, including the crate, was 2125 lbs. The composition of the tame herd on November 30th was as follows:

	<u>Males</u>	<u>Females</u>	<u>Total</u>
Adults	* 211	168	399
1920 Calves	# 16	26	42
	** 227	214	441
*77 castrated.			
# 6 "			
**83 "			

On November 5th, a horse belonging to a man named Daily, who interests in Cooke City, was gored by a buffalo so that it died of the injuries. This occurred near the Buffalo Farm, not far from the road, where the freight team had been turned out to graze for the night.



Buffalo, wild herd: As all rangers were exceedingly busy on the park lines during the month, no reports of the wild buffalo were received.

Bears: The bears were much later than usual in hibernating and a few were seen during the month at Lake Station and at Mammoth as late as November 17th.

Antelope: Apparently most of our antelope herd came down to the usual winter range on Mount Everts and along the north line of the park between Gardiner and Sepulchre Mountain. Additional facts relative to these animals will be found in this report under the heading "Seasonal Changes".

Deer: A few white-tailed deer have been observed back on their usual winter feeding grounds around Headquarters. The black-tailed variety seem to be fairly plentiful, but due to abundance of forage, they are well scattered. About 300 were reported between Gardiner and Hellroaring, along the north line, but no attempt was made to make a complete count. They are in excellent condition. Several small bands noted along the north line near Crevice Station drift back and forth across the park line at will, and while the policy has been to have the rangers on duty along the line keep the animals back into the park where possible, in the case of deer which are small and travel in small bands, this is impossible. From reports received from various sources, it appears that about 32 deer were killed near the north line of the park up to the end of the open season, November 30th. A four point buck deer was found dead in a crevice of the hot springs formation at Mammoth, where it had fallen and was unable to extricate itself. The head has been saved as a specimen for mounting. *mule deer*

Elk: The elk are the animals which command the greatest interest at this season of the year, due to their great numbers and the fact that they are the main object of hunters along the park lines. Up to date they have an abundance of food on their natural range just inside the park lines, and the weather has been mild so they have had no trouble getting down to the grass. Remembering the ease with which



elk were killed in the district immediately north of the park line in Park County last year, prospective hunters have been specially interested in the conditions and prospects for this year, but fortunately for the elk, they have had but small encouragement to date, and it now looks as if the killing would be small. The number of hunters has been few, as they are mostly local, and the conditions did not warrant their spending the time to go hunting. Such reports as can be gathered from outside sources indicate that about 25 elk were killed up to November 30th in Wyoming east of the park, about 3 south of the park, about 50 from the Gallatin and Madison herds west of the park, and possibly 11 in Montana north of the park. The open season for elk in Montana closed November 30th, except for Park County and some other counties not adjoining the park, where it is extended to December 25th. Every effort is being made to hold any bands of elk that may try to go out before that date, and beginning November 30th a little hay is put out for them on Slough Creek, where it is hoped large herds may be held. The ranger force is concentrated along the park lines frequented by hunters and where the herds of elk are likely to go out if bad weather occurs, with instructions to discourage them from going too far in the direction of the park lines. Reports for the month indicate a rather encouraging situation. Several large herds have been seen and they are all in good condition and have a goodly proportion of calves, indicating at least a normal increase among the few that were left from last winter's slaughter.

Mountain sheep: In all 80 mountain sheep were seen in various sections along the north side of the park during the month, and they are in good condition. The usual herd have taken up winter quarters on the north end of Mount Everts and in Gardiner Canyon, where they are seen daily from the main road. Several large rams are included in this herd. Two sheep were killed by hunters during the open season, east of the park, in Wyoming.

Moose: Moose are present in small numbers scattered over practically the entire park. A few were reported from not less than eight stations during November. They are in excellent condition, and a



reasonable number of calves were seen, indicating increase in numbers.

Carnivora: Reports indicate at least the usual number of predatory animals in the park, especially the sections frequented by the elk, deer, and mountain sheep. Coyotes seem to be especially plentiful, and a few signs of gray wolves have been noted, also tracks of mountain lions have been reported in a few instances. Due to the intensive patrols of park lines during the hunting season, park rangers have had but little time to devote to the hunting of carnivora, but possibly more attention can be devoted to this work a little later. A total of eleven coyotes were killed in the park during the month of November.

Trapping: With other more necessary commodities, the price of furs has fallen from last year's to the extent that hunters and trappers have but little incentive to exert themselves. Last year there were innumerable trappers who established themselves near the park lines for their winter's work, requiring constant vigilance on the part of our rangers to see that they did not encroach upon the park. So far this fall the only ones known of are four near the north line on Slough Creek, three along the west line, and two south of the park a few miles outside.

Grazing. There is no fault to find with the natural winter ranges for animals in the park, where grazing is at its best. A winter establishment is maintained on Slough Creek where large stacks of native hay were put up last summer, and all surplus saddle and work animals belonging to the Government are taken there when no longer needed for work, and grazed or fed hay as may be necessary. It is from this ranch that a little hay is also being fed to the elk herds to hold them inside the park until the close of the hunting season. During November red top grass seed was sowed on the freshly fallen snow over these meadows, with a view to improving them for future years.

#### Birds.

This subject is treated further on, under the heading of Seasonal Changes, by Park Naturalist Skinner.



### Fishes.

A few fish were taken in Gardiner River during the month by local residents.

### Seasonal Changes. 15 -

The following notes on seasonal changes are furnished by Park Naturalist M.P. Skinner:

**Botanical:** No growth and no changes.

**Birds:** The last of the following birds were seen: robin on 7th; crow on 8th; intermediate junco on 17th; and pine siskin, Brewer Black-bird, and desert horned lark on the 20th. The first of the following arrived: Bohemian wax-wing on the 7th (and left on the 17th); Hepburn, gray-crowned, and black rosy finches on the 8th; and Rocky Mountain pine grosbeaks on the 12th. A dipper sang a few notes on the 23rd (probably the first of the season), and a Townsend solitaire on the 27th (probably the last of the season).

Four nutcrackers and 15 magpies staid more or less about Mammoth during November. About the first of the month dippers began congregating along the Gardiner River and by the 13th about twenty had arrived for the winter. In addition to the dippers, between 30 and 40 mallard duck, at least one kingfisher, and 6 Townsend solitaires have arrived along the Gardiner for the winter.

It is interesting to note that birds are not coming about the barns and kitchens at Mammoth as they did last year. Weeds are so high and abundant this year that they bear an abundant harvest of seeds well above any snow fallen so far.

**Animals:** The mule deer have not completed "the rut" at the end of the month. The fawns, as well as the young elk and antelope, are particularly large and well formed. This I attribute to the abundance and good quality of the forage, and to the good health and vigor of the breeding stock that survived last winter.

Elk appeared on the plaza at Mammoth for the first time on November 5th. While the number of elk constantly changes with the changes of depth of snow, there are about four hundred head within four miles of headquarters.



Mountain sheep are on the rims of the Gardiner River Canyon. They vary somewhat in number, but eighteen were seen on the 8th, although since then most of the band has been ranging higher.

Antelope, by the first of the month, had practically all reached the low wintering grounds along the North Boundary near Gardiner. About three hundred are known to be present; the proportion of this year's kids being very good. The shedding of horns began before November 1st and was completed on the 28th; the new horns were formed  $2\frac{1}{2}$  inches down from the tip at the end of the month, and in a few instances the prongs were appearing as little buttons on the front edge of the horn.

A jack rabbit was seen on the 13th completely changed to white, and all seen after the 16th were pure white.

Reckoning from this date, the season is six days later than the average.

#### Arrests and Violations of Law.

Park Ranger Lee Cottrell, stationed at Bechler Station in the southwest corner of the park, arrested Murray Baum, of Felt, Idaho, on November 30, 1920, on a charge of killing an elk in the park. The defendant plead guilty of the charge before the United States Commissioner and paid his fine. From the evidence submitted, it is apparent, as a matter of justice, that the park line around the southwest corner should be marked.

On November 7th, Frank Warner and Edwin Abraham, of Livingston, Montana, were arrested at Norris Station by Park Ranger Townsend, for breaking into the station and appropriating some of Ranger Townsend's commissaries. They were en route from Montana to Idaho, on horseback, and were going through the park, which was their nearest route, on special permit from this office. They did not at any time deny what they had done, but claimed a misunderstanding of conditions as they were comparative strangers in the park. They were let off without trial on payment of actual damages to the Ranger's property, and were permitted to leave the Park via Gardiner, the way they had come in, and told not to come back.



### Forest Fires.

The greater part of the park is covered with snow and there is no fire risk at this season of the year.

### Accidents and Casualties.

None of any consequence reported during the month.

### Natural Phenomena.

No observations of natural phenomena were made and, therefore, no changes were noted.

### Special Visitors.

The only special visitors noted during the month were Veterinarians of the Bureau of Animal Industry, who came here to vaccinate the tame buffalo. Dr. Rudolph Snyder and Dr. E. Plank came in on November 5th and left on November 7th. Dr. Plank returned on November 12th for the second vaccination and left on the 15th.

### Motion Pictures.

No motion picture operators visited the park during the month.

### Miscellaneous.

Superintendent Albright left for the Pacific Coast, under your orders, for special work in connection with Western parks, on November 6th, and is still absent.

The announcement of the death of Landscape Architect Punchard on November 12th, as made in your letter of November 18th, came by mail on November 17th and was received by park employees, especially those who knew him personally, with the deepest regret. Your letter, dated November 15th, in regard to the death of Mr. Punchard was received on November 22nd. The last paragraph which states, "As an evidence of our regard and esteem, Director Mather has directed that all the flags in the Park Service be half-masted for thirty days. Your observance of this order is requested", was complied with. The flag at the northern entrance to the park, flown at Gardiner Ranger Station, was carried at half mast from November 22nd to December 22nd. This was the only entrance to the park open to the public during that period, and is the only point in the park, except Headquarters, where it is customary to fly a flag during the winter season. No flag has been flown at Headquarters since early in October, when the rope and pulley got out of order. It was decided as unsafe to try to repair it until spring, when there will be no frost in the 75-foot steel pole, and its use was discontinued for the winter.

Impounded Stock: The cattle reported in pound last month were held throughout the month and were not claimed by the owner.

Medical Service: Our employees were provided with medical service throughout the month by Dr. W.E. Crawbuck, under special arrangements with him. Mrs. Marshall,



wife of one of our automobile mechanics, was under his care for several weeks until she was removed, on November 13th, to Chico Hot Springs, where hospital service was available. She came here from Denver with some form of tuberculosis, and her case is probably hopeless.

Entertainments: No entertainments were provided during the month, though park employees got together and made arrangements to resume them in the near future.

Religious Services. Church services were held morning and evening of November 14th, by Rev. J.P. Pritchard, of Emigrant, Montana.

#### X. RECEIPTS AND REMITTANCES.

Report of moneys due, collected, and transmitted, together with money orders and checks totaling \$759.16, as shown by the report made on the regular printed forms, are enclosed. Acknowledgment of receipt is requested.

##### Checks.

<u>Date</u>	<u>No.</u>		
11-28	1518	Yellowstone Park Transportation Co.,	\$309.00
11-28	795	" " "	32.51
11-28	1527	Yellowstone Park Hotel Co.,	73.75
11-17	546	Yellowstone Park Camps Co.,	90.25
11-27	577	Yellowstone Park Camps Co.,	240.00

\$746.51

##### Postal Money Orders.

<u>Date</u>	<u>Serial No.</u>	<u>Office</u>	<u>Remitter</u>	<u>Amount</u>
11-22-20	45921	Yellowstone Park - Geo.	Whittaker-	\$12.00
11-17-20	45912	" " "	" "	.65
				<u>12.65</u>
				759.16

Cordially yours,

*CAL*  
Chester A. Lindsley,  
Acting Superintendent.

The Director,  
National Park Service,  
Department of the Interior,  
Washington, D.C.

Enclosures.

CAL:CH



Monthly report of Electric  
Power Production during the  
month of Oct 1920

Total Generated.	11,660
Consumed by Concessioners	3,095
Consumed by St Lighting	945
"    "    Government Buildings	112
shops and lines	7620
Peak load, 7 PM-10-31	42

Callan



# Painter's Report for month of Nov. 1920.

- 1 Headquarters Bldg.
- 2 " " 5 hrs. McFarlands Quarters 2 hrs glass
- 2 Mr. Lindslup, glass, placement, 1 hr.
- 3 Bachelor Bldg. 4 hrs, glass. Grays Quarters, 4 hrs.
- 4 Sign for trail at hrs. Humans Dr., 4 hrs, storm windows
- 5 Shop work, 4 hrs Grays Quarters 4 hrs
- 6 " " cleaning etc 8 hrs.
- 8 Kenners storm window 4 hrs, Stimils for blacksmith 4 hrs.
- 9 Bonnels Quarters
- 10 " "
- 11 " " Calcining. varnish, painting
- 12 " " 4 hrs. Mc. Brides plaster 4 hrs.
- 13 Working on tables for general mess.
- 15 Helped plumber 4 hrs, Misc shop work 4 hrs.
- 16 Bigdons Quarters 3 hrs. Bonnels Quarters 5 hrs.
- 17 Allens Quarters, glass, 6 hrs. Bigdons Quarters 2 hrs
- 18 Bonnels Quarters
- 19 " "
- 20 " " Painting —
- 22 Mr. Hills roof 2 hrs Brants storm window, 1 hr.
- 22 Grays Quarters 5 hrs.
- 23 " " 8 hrs Painting Calcining etc.
- 24 " " 8 hrs
- 26 Headquarters 3 hrs, Grays Quarters 5 hrs
- 27 Bonnels Quarters 2 hrs " " 6 hrs
- 29 On leave.
- 30 " " 1/2 day Grays Quarters 4 hrs.

August C. Humann.



N O V E M B E R - - - 1 9 2 0 .

I.

GENERAL CONDITIONS.

Throughout the entire month of November very favorable weather conditions prevailed. Constant patrolling along all of the park borders, saved many thousand elk and abolished the smallest resemblance of poaching.

The bottom falling out of the fur market has practically stopped all trapping, which has left very few inhabitants along the wilds of the park lines. Reports from Rangers in charge of these districts indicate that there are but four trappers working on streams running into or out of the park.

Authorities on "Big Game" claim the calf elk crop to be one of the largest in the park history. They are in excellent condition, having grown large and strong enough to withstand a severe winter. It is noticable that the larger percentage of the calves born are heifers.

The natural inclination of the game herds to drift north caused a great deal of trouble in the Hellroaring district of the park. Rangers under the direction of Chief Ranger McBride have been herding them back to the interior of the park for the, last two weeks.

Several bands of deer are feeding in and out of the park near the Crevice station. The Rangers at this station are unable to hold them in the park. Due to the mild weather, very few hunters have been seen.

Conditions on the North, East and South, lines of the park are very satisfactory, considering working conditions. Protection on the West line has not been up to standard. Reports from that vicinity do not show the proper care of the elk feeding along the park line. Several bands have strayed across the line, a large portion of which have been killed.



## II. PERSONNEL:

No direct changes in station detail was made during the month. Special patrols and changes of line camps were ordered by the Chief Ranger.

### RANGERS:

Thad C. Pound--- Station duty during the first of the month. Ordered to patrol along line to meet Crevice patrol and to watch elk feeding on the Turkey Pen.

Al McLaughlin--- Patrols west on park line during the month. Ordered to herd about 200 elk back to the interior of the park, who had been feeding near the Hoppe fields. He reports about 300 Antelope on the grain fields and in the hills near Gardiner.

Court B. Dewing--- Patroled the greater part of the month between Hellroaring and Gardiner. He was ordered to pack station supplies from Gardiner to a shack in the vicinity of the Crevice Station across the Park line. This was necessary to accommodate extra Rangers working in the district ~~at~~ during an emergency case.

Hans Larsen--- Patroled from Hellroaring to Gardiner. Camped at Cottonwood Basin part of the month. Reports deer plentiful with very few hunters.

Peter Lawson--- Constant patrolling in the Hellroaring district. Moved camp to Hellroaring cabin upon order of the Chief Ranger to be in a better position to drive drifting elk back into the park.

Clifford Anderson--- Patroled north line in Hellroaring district. Moved camp to Slough creek to cover territory for stray elk. Detailed on trapping duty to watch natives living outside of the park.

George Winn--- Patroled north east section of the park. Camped at Cash creek during the latter part. Detailed to Buffalo Ranch to assist in the vaccination.



## II. PERSONNEL: Cont'.

### RANGERS:

HENRY ANDERSON--- Camped at new cabin on north park line during most of the month. From 26th to 30th riding country to hold elk back in the park. ✓

James Dupuis--- Special details from the Chief Ranger during the entire month. Assisted at vaccination of Buffalo herd, trailed D. of I. horses to Slough creek horse ranch as they were brought to Mammoth. Herded elk and Buffalo back to safe feeding grounds. IX ✓

R.E. Wisdom--- Patroled the entire month along Jones creek. Reported few hunters. During the latter part of the month, several hundred head of elk drifted down to the lowlands. He reports two mountain sheep killed by local hunters. ✓ 15 Elk killed  
12 deer down  
IX 12 sheep 2/2

E.T. Scoyen--- Patrols on east line. Watching trappers working out of the park. Reports elk and moose in district. Two trappers having fair success. IX ✓

C.O. Davis--- Patrols on east line and to Jones Pass. Snow deep and unable to use horses. Eagle

Joe Douglas, Ass't. Chief Ranger, Patrols, over entire eastern and southern district. Inspected all stations and cabins. Brought horses to Mammoth Nov. 12, 1920. Trip to Snake river and Cascade during last of the month. ✓

James Russell--- Patrols to Sylvan Pass, Upper Yellowstone, Park Point and along shores of the Yellowstone. Brought horses to Mammoth Nov. 12, 1920. ✓

E.T. Bicknell--- Station duty during most of the month. Patrols on Yellowstone Lake. Reported a fall of four inches of water in the lake during the month. IX Natural Phenomenon

*Noted  
referred 11/19/20  
S.T. Scoyen*



## II. PERSONNEL: Cont'.

### RANGERS:

William Purdue--- Patrols to Cascade cabin, Hairbell creek and irregular patrols along border. Reports several hundred elk feeding near Snake River Station. Made trip to Thumb station with horses. ✓

Earl Bowman--- Patrols to Tower creek, Hairbell and Cascade cabin. Reports many moose in the country. ✓ IX

Raymond Little--- To Cascade cabin, and in district along border where local people were hunting. Patroled entire hunted area. Reports little game. ✓ IX James

Lee Cottrell--- Patroled west line, one patrol to Cascade cabin. Arrested Murray Baum Nov. 30,. Reports little game and park line in poor condition. ✓ IX

C.J. Smith--- Ass't. Chief Ranger, Patrols to Greyling cabin, Gallatin station and along Madison river. Reports several hundred elk on park line. Ordered Gallatin horses brought to Mammoth. ✓ IX

Ford Purdy--- Station duty part of month. Camped at Maple creek. Patrols on Madison river. Reports many moose in good condition, near Riverside. ✓ IX

Luther Custer--- Patrols along line south from Yellowstone. Camped at Maple creek, patrols to Sandy Butte, Greyling and along Madison river. ✓

Sam T. Woodring--- Patrols to Sportsman Lake, Bacon Rhine and camped on park line during most of the month. Reports many predatory animals. ✓

Roy T. Frazier--- Camped on park line, patrolled to Sportsman Lake. Reported few hunters and many moose signs. Left station with horse for headquarters Nov. 29, via Riverside. ✓ IX



PERSONNEL: Cont'.

CHIEF RANGER JAMES McBRIDE:

Inspection trips to the following points in the park during the month:

Fountain Basin,  
Buffalo Ranch --2 trips.  
Hellroaring, --3 trips.  
Crevice, --2 trips.  
Tower Falls, --3 trips.  
Willow Park,  
Reese Creek,  
Turkey Pen, --2 trips.  
-1-

The count of the game in the northern district of the Yellowstone Park by Chief Ranger James McBride is as follows:

Elk .....	11,000	✓
Deer .....	340	✓
Antelope .....	240	✓
Mountain Sheep	80	✓

(This report is made upon personal observation during the month. Though the deer count seems small, a very small effort has been made to count these animals. It is not improbable that the count only covers a few of the many bands.)

PERSONAL ORDERS:

To Hutchins-- Horse Ranch.  
Ordered to feed small quantities of hay to elk feeding in that territory.

To Lacombe--Buffalo Ranch,  
Instructed to keep Buffalo away from the Lamar river for protection of elk.

To Pound-- Gardiner, To  
make daily patrols to Turkey Pen to keep elk back in the park.

To Lawson, C. and H. Anderson,  
Dupuis, Dewing and Larsen-- To keep constant watch for drifting elk and to keep same well back in the Interior of the Park.

To McLaughlin--Gardiner, To  
make daily patrols west of Gardiner station.



PERSONNEL: Cont'.

CHIEF RANGER JAMES McBRIDE:

Personal Orders:

To Dewing-- Crevice, To pack equipment to shack near station for accommodation of extra Rangers. ✓

To Hutchins-- Horse Ranch, to plant grass seed at ranch after first snow storm. ✓ III (c)

To Trischman-- To repair Hell-roaring cabin. Done in Dec.

Instructions relative to patrols to:

Ass't. Chief Ranger Douglas,	
F.J. Townsend.	H. Anderson.
C.E. Dewing.	Peter Lawson.
Hans Larsen.	James Dupuis.
C. Anderson.	Thad Pound.
C.J. Smith.	Al McLaughlin.
George Winn.	W.M. Bishop.

 ✓

-1-

F. J. Townsend--- Patrols to Canyon, Grisslie Lake, Willow park and Gibbon river. Moved household supplies to headquarters between Nov. 1, and Nov. 5. ✓

W.M. Bishop--- Duty at Chief Ranger's Office, assisted at vaccination of Buffalo at both treatments. Trip with Chief Ranger to Crevice, Hellroaring, Slough creek, Tower Falls. Patrols to Sepulcher mountain, Turkey Pen, Highline. ✓

Harry Trischman--- Duty at Mammoth Springs during most of month. Returned from trail crew work Nov. 3, 1920. ✓

-/-



### III. WORK COMPLETED:

The necessity of constant patrolling during the month hindered the work of any other nature. The protection of the game will require all of the attention of all of the men for the next thirty days. ✓

#### Buffalo Ranch:

The annual vaccination of the buffalo calf herd began Nov. 5th., followed by the immunization Nov. 12th. ✓ See pa 11

#### Slough Creek Ranch.

All of the horses used by the men on the Ranger force not patrolling the north line have been brought to the ranch for the winter. Many of these horses are in very poor condition and will require a great deal of attention. It is doubtful if many of them will be available for fire patrols during the summer. ✓ IXL (c)

#### Travel:

By Entrance.

#### NORTH:

Due to the regulation governing tourists entering the park during the winter months, the travel fell below normal. This is also accounted for by the small number of hunters from distant states arriving in Gardiner for hunting purposes. ✓

Number of tourists entered-- 52. ✓ I

#### WEST:

The fishing regulation prohibiting fishing in the Madison river, kept local and other people from entering the park at the Yellowstone entrance. A party of three were given permission to visit the Upper Basin and Norris regions. ✓

Number of tourists entered-- 9 ✓ I

#### EAST: SOUTH.

Snow in the passes stalled all automobile travel. Several hunters stopped at the border stations. ✓ I



## OTHER MATTERS OF GENERAL INTEREST:

### ARRESTS:

Ranger Lee Cottrell of the Bechler River station arrested Murray Baum, of Felt, Idaho, Nov. 30, 1920; on a charge of killing an elk in the Yellowstone Park. He started for headquarters via Ashton by train with the man in custody. ✓ IX

Ranger F.J. Townsend at Riverside, took into custody on the morning of Nov. 7, Frank Warner and Edwin Abraham of Livingston. Both were miners and were on their way by horseback to the Southern part of the park. During the absence of the Ranger, they broke into the station and barn, where they molested personal property. They were brought to headquarters and dismissed from the park. They have been prohibited from entering the park again by Acting Sup't. Lindsley. ✓ IX 11/10/20

### APPLICATIONS:

The Chief Ranger's Office is in receipt of a large number of applications for positions on the Ranger force. Many of them are from men who have formerly soldiered here or former members of the department. ✓

Upon recommendation of the officials of the park, married men will not be considered for positions on the force. The hazard of the work and loneliness makes it impossible for a married Ranger to give entire satisfaction. ✓

No action has been taken relative to the forming of the 1921 force with the exception of a few promises to men formerly employed who have shown their value to the park and the administration. ✓

### AMUNITION:

The department was responsible for incurring an expense of \$31.50 to the park for ammunition to supply the men on the north line. It was impossible to do without the supply. The emergency along the north line drained the personal supplies of all of the rangers in the district. ✓



OTHER MATTERS OF GENERAL INTEREST:

ACCIDENTS:

No serious accidents were reported during the month. Minor injuries were suffered by the following:

James Dupuis,  
B.C. Lacombe.  
Peter Lawson.  
C.B. Dewing.  
C.J. Smith.

(The above named men contracted their injuries while performing their various duties.

IMPOUNDED STOCK: ---Cattle.

Six head of cattle, found in the southern district of the park became the property of the United States government at the close of the month. According to the rules and regulations governing these animals, after due publicity, they must be sold at public auction.

*Sold Dec 1* IX

Three head of young stock are being cared for at the Buffalo ranch. A request was made during the month to the officials at Washington, to authorize the sale of these animals.

✓

Rangers on LEAVE:

The following named Rangers were granted Leaves of Absences during the month:

Thad C. Pound, -- 2 days.  
Harry Trischman, 8 days.  
Joe Douglas, ---- 1 day.

II

The following named Rangers made official trips to headquarters during the month:

Peter Lawson.  
Hans Larsen.  
James Dupuis, 3.  
James Russell.  
Joe Douglas.  
B.C. Lacombe, 2.  
Court Dewing, 2.  
F.J. Townsend, 2.  
C. Anderson,



OTHER MATTERS OF GENERAL INTEREST:

YELLOWSTONE LAKE REPORT: Fall.

Ranger A.T. Bicknell, Lake station, detailed to read gauge placed in Yellowstone Lake for the purpose of registering the rise and fall of the Lake, reports that the water has fallen more than four inches during the month. ✓ I

TRAPPING: 1X

North:

During the past month, four men, two of which are new to the country, have pitched camps near the park line and have laid-out trap lines. Joe Durret, a native, has "grub-staked" one of these men for half of the furs caught. Their trapping has been moderate. ✓

West:

Three men have located along the west line, two of which are well known to this office and have proven themselves friendly toward the park. ✓

South:

Two men have placed trap lines near the park in this district. Their camps are some distance from the park. They seem to be quite reliable, according to the Rangers in the district. ✓

East:

The low price of furs has caused many trappers to seek other forms of occupation as is shown by the fact that but two men have located on this line, where in previous years, camps were quite common. Three other men are located several miles from the park near the north east corner. ✓

QUARTERS:

The new quarters and meal accommodation has met with high compliments from the Rangers visiting the Springs during the month. They have proven very satisfactory.



OTHER MATTERS OF INTEREST:

ROAD CONDITIONS:

Considering the season of the year, the roads are in much better condition than could be expected. A rough report follows:

Gardiner-Mammoth,	Very good.
Mammoth-Tower Falls,	Good.
Tower Falls-C. City,	Fair.
Mammoth-Norris,	Two drifts.
Norris-Canyon,	Heavy.
Norris-U. Basin,	Fair.
Basin-Thumb,	Closed.
Basin-Riverside,	Good.
Riverside-Grayling,	Heavy.
Thumb-Lake,	Quite heavy.
Lake-Canyon,	Fair. Drifts.
Dunraven,	Closed.

-1-

TRUCKING:

No trucks were in the park after Nov. 25th, with the exception of the Cooke City ore trucks and stage. All government trucks ceased operations south before the first of the month. It became necessary for this department to send two trucks to the Buffalo ranch: one for a Buffalo and the other with supplies.

Mr. R.H. Young, operating trucks between Gardiner and Cooke City, Mont., has had trucks over the road practically every day of the month; hauling for parties at Cooke City. He has repaired several broken bridges and assisted in keeping the road open across the "snow-blocks" of the Black Tail.

EFFECT OF COLD WEATHER:

Though the thermometer has registered below zero at all of the points in the park, many of the lakes are still barren of ice. Very few creeks have frozen over and those that have are only covered by a few inches of ice. An eight day thaw put an unusual heavy crust on the snow.



OTHER MATTERS OF INTEREST:

WORK CREWS:

Practically all of the work, preparatory to spring construction was completed by the various company's before the cold, disagreeable weather set in. The month closed with the interior of the park inhabited by Rangers and Winter-keepers only. All wood cutting ceased.

HORSES LOST:

Ira Kimes, winter-keeper at the Norris lunch house reported to the Chief Ranger's Office that his four horses, two whites and two back-skills, had strayed into the park. All Rangers were instructed to be on the "look-out" for them. "Society Red", employed by the Transportation company was given a permit to hunt for them in the vicinity of the headwaters of Reese creek. He was unsuccessful.

An investigation, conducted thru this office indicates that the horses have been stolen and shipped out of the country. We are positive the animals are not in the park.

Killed:

Buffalo Keeper Lacombe reported to the Chief Ranger's Office that a buffalo had killed a horse owned by a freighter named Daily, living at Cooke City. The man had thrown the horses into the park and while feeding near the buffalo one was hooked by a buffalo bull. It soon died of injuries sustained.



GAME:

The wild animals to be seen during the month seemed contented and in good condition. Many kinds of animals, generally in the habit of hibernating early in the fall, were seen feeding near the Ranger stations over the entire park. Feed in large quantities, and said to be of a very good grade, is to be had. In many game regions, it is almost impossible to tell where the herds have fed.

BUFFALO: Wild Herd:

Though no count of the wild buffalo herd has been made this year, it is claimed there are 120 animals in the herd. Ranger George Winn reported a large herd of wild Buffalo on Cache creek. The sentiment among the "wise ones" is that the herd has increased about 15%.

BUFFALO: Tame Herd:

The annual vaccination of the buffalo calf herd was conducted at the buffalo ranch November 5th, when 42 calves were given the sirrum treatment by Doctors Rudolph Snyder of Helena and E. Plank of Billings Mont. The entire operation was conducted without a serious accident to either the animals or men involved. Again on Nov. 12th, the same animals were given another treatment to immunize the herd. On the same day, six of the ~~largest~~ smaller bulls were castrated.

The count of the tame buffalo herd is as follows:

Males	Females
211	
212 Grown.	188 Grown.
16 Calves.	26 Calves.
<u>228</u>	<u>214</u>
Grand Total, .....	442.

An exceedingly fine specimen of a Buffalo Bull was crated and shipped to the Toledo Ohio Zoology Society from the Buffalo Ranch on Nov. 5th. Reports from the institution say the animal arrived in good condition and was satisfactory in every respect.



GAME:

BEAR:

Very few bear were seen during the month. Rangers at the Lake station say two bear can be seen feeding around the dumps daily. Bear tracks were seen at Mammoth on Nov. 13th and again on Nov. 17th. Nevertheless it is commonly believed that the majority have wholed up. No count of these animals has been made.

IX ✓

ANTELOPE:

A herd of about 150 antelope can be seen on the grain fields at Gardiner daily. They have not shown an inclination to leave the park. Ranger McLaughlin reported that he found one female dead in the course of his months patrolling. As a whole, they are in very good condition. The number of these animals as reported to the Chief Ranger's Office has varied from 50 to 75 animals. Chief Ranger McBride has counted 240 near the north line. A herd of about four hundred has been seen near Casper, Wyo.

IX ✓

DEER:

No effort has been made to count these animals this fall. They have caused little trouble as the greater percent is feeding in the interior of the park. About 300 have been counted between Gardiner and Hell-roaring, which does not mean all of the animals.

IX ✓

Hunting season on deer closed around all sections of the park Dec. 1. After compiling all available statistics, 32 were killed during the season by hunters along all of the borders of the park. The mild winter saved several hundred head. A four point buck died in a cavity on the Mammoth formation during the rutting season. He became caught between the rocks and killed himself in his efforts to free his feet.

✓



GAME:

ELK:

With extermination of our noted elk herd facing the force Nov. 1, every effort was made to keep them well in the interior of the park and high in the mountains. All Rangers were given strict instructions to keep all information about the animales seen to themselves. In spite of these orders, some information leaked out. Though no harm has been done by this, it is believed by those unconcerned that our herd numbers between 5 and 8000 animals. ✓

The number of elk in bands and their feeding ground follows, as seen by the Chief Ranger and his assistants:

Turkey Pen,	500
Gardiner Flats,	83
Mammoth,	57
Gardiner Canyon,	185
Black Tail	469
Norris	28
Tower Falls,	2,000
Slough Creek,	1,000
Buffalo Ranch,	200
Pebble Creek,	20
Cottonwood Basin,	100
Little Buffalo-	
Hellroaring,	6,000
West of Gard-	
iner River,	<u>570</u>
Total, ....	11,282

The above figures are as accurate as is possible by actual count. With this number, reports from Riverside, Gallatin, Beohler river, Snake river, Sylvan Pass, Thoroughfare and interior stations, could add several thousand more to the count. We do not care to use these figures as well as the figures of other bands in this locality. ✓

Hunting season on elk closed around all sections of the park with the exception of a portion of Gallatin and Park counties in the state of Montana. ✓

The number of park elk killed up to Nov. 1; follows:

East,	25.	West,	50
North,	11.	South,	3.



GAME:

MOUNTAIN SHEEP:

Mountain sheep in small bands can be seen daily in the Gardiner canyon. Though no effort has been made to make a count of these animals, Chief Ranger McBride's figures show 87 head in the north section of the park. These animals are feeding over a wide area and are difficult to see.

Ranger R.R. Wisdom, of the Sylvan Pass station, reported to the Chief Ranger's Office that hunters living near Cody had killed two head of these animals near the park. Both were bucks.

MOOSE:

Almost every Ranger in the department has noted moose or signs of them on his report. They are getting quite tame and are seen more frequently on the lowlands. Many calves were born this spring, the reports show.

No effort has been made to estimate the herd. They have been seen in the following localities:

Gallatin,	Large herd.
Riverside,	Seven head.
Bechler River.	Quite common.
Snake River,	Several bands.
Sylvan Pass,	Common.
Upper Yellowstone,	Many seen.
Soda Butte,	18 head.
Hellroaring,	Many signs.

CARNIVEROUS ANIMALS:

Reports from all districts in the park show the coyotes to be increasing rapidly. Though three N.P.S. men at Mammoth are hunting regularly for them, they have met with little success. No estimate of their number has been made. Eleven were killed in the park during the month and the hides given to the hunters.

Wolf tracks and wolves are seen very often on the Tower Falls road. A pack of nine was seen recently by a truck driver.

Two lion tracks have been noted on the Turkey Pen. They are running with the elk.